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ABSTRACT

Foreign study has been growing worldwide since the end of World War II. There is a significant flow of students from less developed countries to more developed ones. This paper presents findings of a study that assessed two theories of development, modernization theory and dependency theory, and applied these theories to identify the impact of foreign study on national development. Modernization theorists assert the positive effects of foreign study and dependency theorists argue that foreign study has a negative effect on the home country. Methodology involved regression analysis of Gross National Product (GNP) data from 34 African countries contained in the World Bank's World Development Reports for 1972 and 1992, and from student population data from the UNESCO Statistical Yearbook, 1972. Findings support the modernization perspective on the effects of foreign study. The more students that a country sent to its former master country in 1970, the better economic performance the country achieved between 1970 and 1990. One explanation for the finding is that foreign study is an efficient mechanism for transferring the advanced technologies and skills for economic development from developed countries to developing ones. Another explanation is that foreign study is an effective means for professionals from developing nations to acquire negotiation skills for leading their home countries to economic development. However, the dependent variable, GNP per capita, does not reflect other kinds of development, such as political democratization, the adoption of cultural diversity, and the expansion of education. Foreign study may have negative effects on the home country that are less obvious than the positive ones. Two tables are included. (LMI)

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"Foreign Study for Development or Dependency of Developing Countries?"

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I. Introduction

Foreign study has been growing worldwide since the end of WWII. UNESCO reported that there were 107,589 students who studied in foreign countries in 1950 and 1,085,878 in 1989(UNESCO, 1950, 1990). There is an especially significant flow of students from developing countries to developed ones. In 1989, there were 197,001 students from Africa, 41,965 from South America and 497,800 from Asia, which means that about 70% of students abroad are from these developing areas. How, then, does the phenomenon of foreign study, as an impact from and a linkage with developed countries, affect the development of the developing countries? This paper attempts to analyze this issue from the perspectives of both modernization theory and dependency theory.

II. Theoretical Background

Numerous attempts have been made by scholars to illustrate the relationship between linkage with developed countries and development of developing countries in aspects of the economy such as international trade, foreign aid and foreign direct investment. From the modernization theorist's point of view, international linkage of states is seen as a key to development. According to Rostow (1959, 1990), types of economic linkage with developed countries such as foreign aid and investment have a positive effect on the development of developing countries based on their linear model of development. He asserts that the origin of development, or "Take-off", comes from external impact. The political and social structure of traditional societies is changed by the foreign impact and, then, the societies can take the first step toward independent development.

From the modernization theorist's perspective, educational development is as linear a process as economic development. In the traditional societies, educational institutions diffuse modernity and modern knowledge to people. To "Take off," traditional societies are required to change their values as well as their social systems. Rostow lists not only the acquisition of science and technology but also the acquisition of values from non-traditional societies as pre-conditions for economic development. Education is expected to function in this process of acquiring new values from non-traditional societies. Thus, this modernization of values usually means Westernization of values. Therefore, since foreign study in Western countries seems to be the most effective way to acquire modern values, attitudes, skills and technology, foreign study is the preferred type of education for modernization theorists.

On the other hand, dependency theorists assert that the origin of underdevelopment is attributed to the international linkage between developing and developed countries as the dependency structure, the "Core" and "Periphery", and the exploitation structure between

them. The Periphery where the economic systems were integrated into the world capitalistic system, the traditional education systems were not even replaced by new educational systems, but were destroyed by the "industrialization". The Periphery's underdevelopment, which was caused by the Core's exploitation, damaged the indigenous knowledge. Economic dependency creates educational and cultural dependency, which then creates technological dependency, and that technological dependency therefore promotes the economic dependency.

Education under colonialism increased this contradiction. The imposed Western educational systems did not have social reproduction function within the country, but instead producing colonial elites who could serve for the Core, at the same as destroying indigenous culture and nationalism. There was no possibility that the elites, who were educated on the basis of the history and language of the Core, could be in charge of the independent development of the Periphery.

As the most important international linkage of education, foreign study has been analyzed from the perspective of dependency theory. Altbach (1985, 1987) asserts several negative effects of foreign study from the perspective of dependency theory including the following points:

* Foreign study prevents students from using an indigenous language for scientific work in their home countries and from contributing to the progress of local academia.
* Foreign study makes students consumers of Western goods and research orientations.
* Because returned students are often overvalued compared to locally educated people, it may damage the equity.
* Foreign study in the former colonial master country of the students' home country functions to maintain the colonial relationship.

Thus, the previous literature indicated that modernization theorists assert the positive effect of foreign study on national development and dependency theorists assert a negative effect. While there have been several statistical studies about the effect of economic linkage on economic growth of developing countries (Galtung, 1979, Chase-Dunn, 1975, Delacroix and Ragin, 1981), there is only one study identified statistically whether a positive or negative effect from foreign study on economic development is stronger. Fry (1984), using cross national and multiple regression approach, found that foreign study has significantly positive impact on economic growth. Recognizing the importance of his research, there are some necessities to improve his model. For example, the major independent variable he used, percentage of population studying abroad in 1966, should be divided into regional flow of students and global flow of students. In some regions of developing areas, such as Middle East, it is common for students to study in neighboring countries. Although this is certainly one type of foreign study, the analysis including this regional exchange of students may not capture the modernization or dependency effect of foreign study. One more major problem of his study was his dependent variable, growth in real GNP during the 1970. Because economic development can be better captured with looking at growth rate of per capita product and the population growth rates are various across developing countries, the only growth rate of GNP should not have been used as dependent variable.

III. Method and Result

This statistical analysis consists of two parts. First, it will examine the effect of study in all foreign countries on economic development. Secondly, this study will look at the effect of study in particular foreign countries.

A. The effect of study in all foreign countries on economic development

The basic method here is to analyze the cross-national effect of foreign study in 1970 on the economic performance of students' home countries between 1970 and 1990 using multiple regression analysis. The proportion of students in foreign countries per population will be set as an independent variable and the economic performance will be set as a dependent variable. The sample countries to test here are 34 African countries. This research is limited only to African countries in order to make the samples homogeneous in their political systems and histories. Although there is great diversity among African countries, it seems more reasonable to study, for example, the effect of colonialism in the controlled context of Africa rather than on a stage on which Africa, Latin America and Asia are put together.

The first regression model is as follows:

$$Yt = b0 + b1*Yt\text{-}1 + b2*Xt\text{-}1 + e$$

Yt = Gross National Product per capita in 1990

Yt-1 = GNP per capita in 1970

Xt-1 = Number of students who studied in foreign countries in 1970 / Population in 1970

The GNP data is obtained from the World Development Report in 1972 and 1992 published by the World Bank. The number of students in foreign countries and the population are from UNESCO Statistical Yearbook, 1972.

This type of regression model is generally called a panel design, in which a time gap is put between the dependent variable and the independent variable. This model is more effective in identifying causation than a model in which the times of the independent and dependent variables are same. In this model, because we set the time of the dependent variable t and the

time of the independent variable t-1, the dependent variable of t-1 must be put as an independent variable to control the already existing effect of the dependent variable of t-1.

Therefore, as we attempt to analyze the effect of foreign study, if b2 is positive with statistical significance, this model supports the modernization theory, and if b2 is negative, this model supports the dependency theory.

Table 1 shows the result of this statistical analysis. There is a statistically significant positive effect of foreign study on the economic development of African countries. The result tells us that the more students one country sent in 1970, the better economic performance the country achieved between 1970 and 1990. The modernization theory is supported.

B. The effect of study in particular countries on economic development

The next statistical analysis attempts to investigate the effect of foreign study in particular countries, more specifically, the sending country's former master country in the colonial age and other major host countries. Here we use same samples, same analytical framework and same data source as those of the first analysis.

The second regression model is as follows:

$$Yt = b0 + b1*Yt-1 + b2*Xt-1 + b3*Zt-1 + e$$

Yt = Gross National Product per capita in 1990

Yt-1 = GNP per capita in 1970

Xt-1 = Number of students who studied in the former colonial master country in 1970 / Population in 1970

Zt-1 = Number of students who studied in the United States and West Germany / Population in 1970

The research review tells us that dependency theorists share the view that educational dependency is New Colonialism. Although many former colonies became independent after World War II, almost all of these countries could not stop political, economic and cultural relationships with their former invading countries. From this point of view, the Core, or former colonial master countries, is trying to maintain its influence on the Periphery, or the developing countries through the education for students from their former colonies. The dependency theorists see foreign study in the former master countries more problematic for the development of former colonies than study in other nations which have not had colonial ties with the students' home countries. Since this study uses the samples of Africa, the former master countries are Great Britain and France in most cases. The number of students in former colonizing countries was given according to the history of each African country.

While the former master countries are historically the most popular places for students from Africa, the United States and West Germany are often also host countries for them. The independent variable of students in these two countries is set to contrast the effects of study in the former master countries and the new host countries on development.

Based on their linear concept of development in modernization theory, it does not matter if the host county is a former colonial master country or not for the effect of foreign study on development.

Therefore, if the effect of foreign study in the former master countries is less positive than that in the US and West Germany, the dependency theorists' concern about colonial negative effect on development will be supported by the model. If there is no difference between the

effects of foreign study between study in the former colonial master countries and that in the US and West Germany, the modernization theorist view will be supported.

Table 2 shows the results of this statistical analysis. There is a significantly positive effect of study in the former colonial master countries. Ironically, although there is a difference in the effects of foreign study between study in the former colonial master countries and that in the US and West Germany, this not what the dependency theorists anticipated. The study in the US and Germany had a negative effect on economic development of African countries. The result tells us that the more students one country sent to their former colonial master countries in 1970, the better economic performance the country achieved between 1970 and 1990. However this is not true the case of study in other major host countries. Although this result is a little confusing, it is reasonable to say that the dependency theorists view of colonial educational linkage as a negative impact on development is rejected.

IV. Conclusion

This research attempted to assess two theories of development, modernization theory and dependency theory, and to apply these theories to identify the impact of foreign study on national development. The statistical analysis supported the modernization perspective on foreign study. There are several explanations for this finding. The most common one is that foreign study is an efficient mechanism to transfer the advanced technologies and skills for economic development from developed countries to developing countries. Another explanation can be that foreign study is a very effective means for the professionals from developing countries to acquire negotiation skills, such as foreign language and basic networking techniques, so that they can lead their home countries to economic development in the international interdependent economy.

However, there are several possible challenges to this conclusion. First of all, the dependent variable, GNP per capita, certainly does not reflect all kinds of development. Political democratization, the adoption of cultural diversity, the expansion of education and the realization of independent security system, for example, may be other forms of development. Actually modernization theorists have been criticized in this point. They automatically assume that development is economic development. Even if we can agree that economic development is a significant part of the total development, still the relevancy of GNP per capita to explain economic development can be challenged. As some dependency theorists assert, income distribution may be more important than macro economic growth because "trickle down" never happens. But at the same time, GNP per capita is still the most commonly used indicator of development. Even many dependency theorists have used this data when they have conducted empirical data analysis. Although it is obvious that further research is necessary using alternative development indicators as dependent variables, the analysis with GNP per capita should always a foundation of this empirical research.

Secondly, the interpretations of the independent variable, the proportion of students abroad, can be various. This number may represent how open the home country's social system is, how good relationship the country maintains with developed countries, how much aid the country receives or how much the domestic education is influenced by foreign countries. Although I did not include these in the independent variables, this problem can be called an extended multi-colinearlity problem. The effect of foreign study may not be important if another possible variable, which has a high correlation with foreign study, causes economic development. This way of thinking can help us to interpret the confusing result of the second analysis. The negative impact of study in the US and West Germany on economic development does not mean that the foreign study itself had a negative impact but the policy or situation of the home countries, which send their students to more diverse countries rather than only to their former colonizers, may be negative for their economic development. We may conclude from this result that stronger relationships between former colonizers and former colonies cause more economic development. This extended interpretation is controversial, but explains the linkage between the first and second analysis better than the interpretation in which foreign study means foreign study only. I do not believe that this controversial statement should be made from only the statistical analysis. Furthermore case analysis is needed to identify the positive and negative impacts of colonial ties on economic development.

Third, the negative impact of foreign study, which dependency theorists assert, may exist but may not be strong enough compared to the positive impact. This interpretation is highly possible. The result of the analysis does not suggest a blind increase in foreign study in order to achieve economic development. Identification of the positive and negative aspects of foreign study is important, especially for those who send and host international students to maximize the positive impact and minimize the negative impact.

During the past forty years, the opportunities for foreign study have been provided by bilateral and multilateral, public and private aid agencies. This study suggested that the effort which has been made is in the right direction. Foreign study is expected to be fruitful not only for national development, but also individual lives of students and international mutual understanding. We also need to reevaluate the outcomes of foreign study by including the consideration of these invisible but crucial aspects.

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Table 1 *The effect of foreign study on economic growth of African nations*

Model 1 $Yt = b0 + b1*Yt-1 + b2*Xt-1+e$

	Standard Error	*T value*	*Prob>ITI*
Yt-1	0.91	3.835**	0.0006
Xt-1	0.41	4.255**	0.0002

* P < 0.05
** P < 0.01

Yt = GNP per Capita in 1990
Yt-1 = GNP per Capita in 1970
Xt-1 = Number of students who studied abroad in 1970 / Population in 1970

R-square	0.6578
Adjusted R-square	0.6357
F Value	29.794
Prob>F	0.0001

Table 2 *The effect of foreign study in particular countries on economic growth of African nations*

Model 2 $Yt = b0 + b1*Yt-1 + b2*Xt-1 + b3*Zt-1+e$

	Standard Error	*T value*	*Prob>|T|*
Yt-1	0.86	1.527	0.1372
Xt-1	0.63	6.983**	0.0001
Zt-1	0.63	(-1.995)	0.0552

* P < 0.05
** P < 0.01

Yt = GNP per Capita in 1990
Yt-1 = GNP per Capita in 1970
Xt-1 = Number of students who studied in the former colonial master countries in 1970 / Population in 1970
Zt-1 = Number of students who studied in the United States and West Germany in 1970 / Population in 1970

R-square	0.7955
Adjusted R-square	0.775
F Value	38.888
Prob>F	0.0001